

United States Patent [19]

Bolander et al.

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[54] **USE OF DEMINERALIZED BONE MATRIX
IN THE REPAIR OF SEGMENTAL DEFECTS**

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A01N 1/02

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427/2; 514/21; 530/840

[58] Field of Search 623/16, 66; 424/95;
530/840; 514/2, 20, 21

[56] References Cited

U.S. PATENT DOCUMENTS

4,294,753	10/1981	Urist	623/16 X
4,330,891	5/1982	Bränemark et al.	623/11 X
4,378,803	4/1983	Takagi et al.	623/66
4,472,840	9/1984	Jefferies	623/16

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[57] ABSTRACT

A grafting material comprising milled bone which has an initial coating of guanidine-extracted bone proteins which are dialyzed from solution. Unbound bone proteins are removed and this augmented milled bone is lyophilized. A subsequent coat of anti-coagulated plasma containing plasma proteins is applied to the augmented milled bone. The unbound plasma proteins are removed from the coating by rinsing.

4 Claims, 4 Drawing Sheets

